

## Transforming Governance of German Higher Education Institutions

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### Abstract

*Since the implementation of the Excellence Initiative and the Excellence Strategy, German higher education institutions have been restructuring university governance, especially those selected as Universities of Excellence. This study uses a holistic and mission-related integrated governance approach to conduct a qualitative analysis of the governance transformation of German Universities of Excellence, aiming to provoke discussion on transforming governance to optimize organizational effectiveness and sustainable development of German higher education institutions. Transforming governance of German Universities of Excellence involves mission statements, strategic goals, institutional strategies, research, teaching, the third mission, internationalization, global engagement, governance relationships and structures, institutional leadership, funding, autonomy, innovation, digital transformation, quality assurance, and sustainable development, aiming to enhance accountability, performativity, transparency, openness and organizational effectiveness with efficient administrative management in alignment with institutional missions, vision, core values, and strategic goals.*

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**Introduction**

The German higher education system is a federal system and consists of 16 independent sub-national systems that take the primary responsibility for higher education (Capano, 2011, p. 1631). Since the Bologna Declaration and the Bologna Process as the major impetus for restructuring the system of quality assurance in German higher education (Mause, 2011, p. 23) pioneered the reform (e.g., restructuring degree programs, accreditation structures, and ECTS), German higher education institutions started the transformation of governance to strengthen the growing managerial self-governance in the late 1990s.

The German federal and state governments have undergone a series of policies to enhance German higher education institutions' international competitiveness and visibility. With the growing global competition among world-class universities, the German federal and state governments agreed to launch the Excellence Initiative in 2005 to enhance top-level research and the quality of German universities with a total of €1.9 billion in funding (2005-2012) in three funding lines (Graduate Schools, Clusters of Excellence, and Institutional Strategies), jointly funded by the federal government (75%) and federal states (25%) (WR, 2020). The first round of funding was granted for 18 graduate schools, 17 clusters of excellence, and 3 universities in 2006 (WR, 2006). The second round of funding was granted for 21 graduate schools, 20 clusters of excellence, and 6 universities in 2007 (WR, 2007). In 2009, the federal and state governments approved the Excellence

Initiative with €2.7 billion in funding (2012-2017, extended to 2019). Funding was awarded to 45 graduate schools, 43 clusters of excellence, and 11 universities for institutional strategies in 2012 (WR, 2020).

Following the Excellence Initiative, the German federal and state governments started the Excellence Strategy to strengthen cutting-edge research in German universities in 2019. The Excellence Strategy is jointly funded by the Federal Government (75%) and federal states (25%) with a funding volume of €533 million per annum in two funding lines: 57 Clusters of Excellence and Universities of Excellence (10 universities and Berlin Alliance<sup>1</sup>) until 2026 (BMBF, 2019).

The federal and state governments have also initiated other joint programs, e.g., the Higher Education Pact (2007-2015), the Pact for Research and Innovation (2005-2015), and the Quality Pact for Teaching (2011-2020). Governmental funding incentives through the Excellence Initiative and the Excellence Strategy stimulated competition for funding among German higher education institutions and accelerated the governance transformation of Universities of Excellence to develop world-class universities and cutting-edge research in broader disciplines. However, there is a gap in knowledge on the ongoing governance transformation aligned with the digital

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<sup>1</sup>Universities of Excellence include RWTH Aachen University, Berlin University Alliance (Free University of Berlin, Humboldt University of Berlin, Technical University of Berlin, and Charité-Universitätsmedizin Berlin), University of Bonn, Technical University of Dresden, University of Hamburg, Karlsruhe Institute of Technology (KIT), University of Heidelberg, University of Konstanz, LMU Munich (Ludwig-Maximilians-Universität München), Technical University of Munich, and University of Tuebingen.



transformation of Universities of Excellence since the implementation of the Excellence Initiative and the Excellence Strategy. This study conducts a qualitative analysis of the governance transformation of German Universities of Excellence for sustainable development since the implementation of the Excellence Initiative and the Excellence Strategy. It focuses on the institutional level of governance, aiming to provoke further discussion on transforming university governance, digital governance, sustainability governance, and good governance for organizational effectiveness and sustainable development. The research question guiding this study is “In what way will university governance enhance organizational effectiveness and sustainable development?”

### **Literature Review**

#### **A new approach to leadership and development**

Studies are concerned with diverse models (Baldrige, 1971; Braun, 1999; Shattock, 2006), dimensions (Clark, 1983) discourses (Magalhães & Amaral, 2009), concepts, and mechanisms in university governance from different theoretic perspectives in diverse national higher education contexts (e.g., Clark, 1983; Neave & van Vught, 1994; Amaral, Jones, & Karseth, 2002; Kezar & Eckel, 2004; Shattock, 2006; De Boer, Endres, & Schimank, 2007; De Boer, Huisman, & Meister-Scheytt, 2010; Van Vught & De Boer, 2015). “Five primary models of board-level governance in universities are the academic staff/faculty/collegial governance, corporate governance, trustee governance, stakeholder governance, and amalgam models of governance.” (Trakman, 2008, p. 63).

Governance in higher education research involves “five instances of coordination and the relationships between them: the state regulation of higher education, the influence of external stakeholders (e.g., agencies, academic staff, and self-organization of universities), university management and administration, and the role of competition and market mechanisms” (Wolter, 2007, p. 1). Governance is “a specific mixture of state regulation (top-down authority), stakeholder guidance (intermediary bodies as goal-setters and advisers), academic self-governance (institutionalized in collegial decision-making at universities), managerial self-governance (university leadership as internal goal-setters, regulators, and decision-makers), and competition for scarce resources (mostly on quasi-markets)” (De Boer, Endres, & Schimank, 2007, p. 139).

University governance reform faces “the exclusive and distinct dilemma between representative democracy and organizational effectiveness, between integrated management structures and dual management structures, between external and internal influencing institutional decision-making, between centralization and decentralization in more autonomous universities” (Larsen, Maassen, & Stensaker, 2009, p. 45). Among three grand narratives (new public management, network governance, and neo-weberianism) on the systemic reforms and policies to modernize higher education institutions as part of the public sector and organizational actors, the new public management provides “the main instruments for a tighter coupling and a stronger hierarchization in the foreground of the instrumentalist perspective on universities as organizations” (Ferlie *et.al.*, 2008, p. 335; Kehm, 2013b, p. 6). The new public management, characterized by marketization, privatization, managerialism, performance measurement, and accountability, relies on “markets (or



quasi-markets) instead of planning and hierarchies; performance measurement, monitoring, management, and audit systems instead of collegial self-regulation; a powerful and entrepreneurial management instead of an interplay of collegial public sector professionals and administrators; and a focus on efficiency, value for money, and performance instead of democracy and legitimation" (Ferlie *et.al.*, 2008, p. 335; Kehm, 2013b, p. 6). Higher education reform in the organizational transformation and governance shift in higher education institutions is mainly based on the ideals of new public management (Bleiklie, 1994, 1998; Kogan et al., 2007; Schimank & Lange, 2009; Kretek, Dragšić, & Kehm, 2013, p. 39) with steering at a distance and the new managerialism model (strengthening the intermediate administrative level, the priority-setting, and the client-orientation) (Braun, 1999, p. 11). University governance reforms reflect the broader new public management reforms focused on increasing efficiency (Christensen, 2011, p. 503). The new public management is the crucial concept in the policy discourse that has driven the governance reform and reform of governance structures in German higher education (Wolter, 2007, p. 9). New public management reforms have attempted to structure the regulation of higher education institutions and higher education systems to ensure the efficient and effective achievement of goals" (Hüther & Krücken, 2018). "Governance with instruments of new public management characterized recent reforms of steering higher education systems and managing higher education institutions as parts of a reform agenda targeted to transform German higher education institutions to meet societal and economic needs in the emerging knowledge societies" (Kehm, 2013b, p. 1). German higher education institutions shifted to new public management as a model of managerial governance with a

focus on organizational effectiveness and efficiency to ensure autonomy at the decentralized level but reach central targets through competitive business instruments (Hartwig, 2006, p. 3; De Boer, Endres, & Schimank, 2007).

The traditional dominant governance regime of the German higher education system is “a combination of political regulation by the state authority and professional self-regulation by an academic oligarchy” (Clark, 1983, p. 140) whereas the market and the university management are rather weak (Wolter, 2007, p. 5). The reform of governance structures in German higher education institutions is influenced by “the Dutch model of steering at a distance for the relationships between state and institution and the American model of strong management for the decision-making processes within the institution” (Wolter, 2012, p. 129). Since 1999, German higher education institutions are transforming from the Humboldtism and classical academic self-regulation model to constrained marketization with market-oriented mechanisms (Dobbins & Knill, 2014, p. 139) toward the managerial university (Teichler, 2011, p. 225) and evaluative governance (Neave & van Vught, 1994; Neave, 1998). German higher education institutions’ governance as the ‘bureaucratic-oligarchic’ model is under a reforming process but is strongly resistant to change (Lazzeretti & Tavoletti, 2006, p. 32). The dimensions of governance in higher education (state regulation and academic self-governance) are transforming into “new modes of governance in the form of ‘steering at a distance, new public management approaches, communicative planning, and network approaches” (De Boer, Enders, & Leisyte, 2007, p. 42). Changes in the traditional governance structures result from the increased importance of the mechanisms of external guidance, managerial self-governance,



competition, the simultaneous decline of state regulation, and academic self-government in decision-making (De Boer, Enders, & Leisyte, 2007; Hüther & Krücken, 2013, p. 307).

### **Research Methods**

This study adopts a descriptive multiple case study to conduct a qualitative analysis of the governance of Universities of Excellence in Germany. It uses a transformative approach with a purposeful sample to investigate the governance of the leading public research universities titled Universities of Excellence in Germany. Four research-intensive universities share international profiles with transnational networks with elite universities. The identities of four research-intensive Universities of Excellence are presented as A, B, C, and D. A and D are members of German U 15 (a network of German leading research universities). C is a member of the TU9 (German Universities of Technology Association, the alliance of 9 leading Technical Universities in Germany).

Data collection focuses on second-hand data from published documentation and official databases, websites of higher education institutions (e.g., annual reports of universities, Proposals for the Universities of Excellence Funding Lines, etc.), websites of universities alliances, foundations (e.g., the German Research Foundation), and German governmental authorities (e.g., the Federal Ministry of Education and Research, the German Science and Humanities Council, the Conference of Rectors, the German Council for Sustainable Development), and international organizations (e.g., the UN, the UNESCO, the OECD, the EU).



Data are categorized into mission statements and strategic goals; research and teaching; internationalization and transnational cooperation; innovations and digital transformation; governance relationships and structures; funding and autonomy; quality assurance and sustainable development for thematic analysis and content analysis. In terms of the validity and reliability of qualitative data, a general guideline of the criteria focuses on completeness of information, adequacy of interpretation, determination of inconsistencies in data, and multiple methods to gather data.

### **Findings and Discussion**

The tasks of university governance include “the definition and implementation of the university’s mission and the approval of long-range plans; the achievement of unified support for major university commitments; the determination of institution-wide policy standards and the delegation of authority; the determination of procedures and standards for appointment, advancement, and termination of key personnel; the approval of budgets and major financial components and the exercise of financial oversight; the provision of effective crisis management; and the integration of the mix of financial, academic, and institutional commitments” (Balderston, 1995, pp. 64-65). Five highly interrelated elements of the university as an organizational actor are decision-making structures within universities, accountability, mission statements, organizational structures, and the rise of the management profession (Krücken, 2011, p. 5). Based on five elements of governance in higher education “institutional autonomy, financing/funding, quality assurance (research and teaching), institutional steering and management, leadership within institutions” (Wolter, 2007, p. 2), this study presents the following interrelated



aspects of university governance in German Universities of Excellence: mission statements and institutional strategic goals; research and teaching; internationalization and transnational cooperation; innovation and digital transformation; governance relationships and structures; funding and autonomy; quality assurance and sustainable development.

### **Mission Statements and Strategic Goals**

Mission statements are one of the organizational instruments used to develop individual profiles and reinforce the branding activities of universities (Kosmützky & Krücken, 2015, p. 138), which provide a basis for higher education institutions' objectives and specific profiles (e.g., organizational tasks, goals, and images), promoting strategic management and marketing, and quality assurance (Kosmuetzky, 2012; Hladchenko, 2013, p. 230). Four universities show their organizational identities associated with their missions, core values, vision, and strategic goals.

A's mission statement states four aspects: research and training; ethics and academic freedom; equality; further training. A is committed to the highest standards of research and teaching; encourages international interdisciplinary cooperation; upholds academic freedom in research and teaching; supports equality and diversity as essential to academic excellence. A underlines its strategic goals in a globalized and connected world; focuses on research, relevance, and responsibility as an interdisciplinary, international, and innovative university to expand top-level research and cooperation to maintain its position as an outstanding research location with an international profile in the long term; recruits internationally

renowned researchers; develops a collaborative research environment; forms networks to enhance the competitiveness of research areas.

B is a research-oriented university with a responsibility to society, providing high-quality research and educational opportunities. Its strategic development is guided by organizational effectiveness and social responsibility. B's performance areas of the Excellence Strategy (research, teaching, and knowledge transfer) are intrinsically interlinked and mutually reinforcing. B implemented various strategic research, international positioning, and transfer measures to consolidate and advance existing and emergent research areas with its strategic support of research priorities including establishing research initiatives, network platforms, transfer platforms, the freedom for creativity program, strategic fundraising, relationship management, and academic support services.

C promotes and develops talents to become responsible, broad-minded individuals and empowers them to shape the progress of innovation for people, nature, and society with the highest scientific standards and technological expertise, with entrepreneurial courage and sensitivity to social and political issues, and a lifelong commitment to learning. Excellence, entrepreneurial mindset, integrity, collegiality, and resilience form the foundation of its relationships with cooperation partners. As a leading entrepreneurial university, C is a site of global knowledge exchange to shape the future with talent, excellence, and responsibility. C accelerates academic excellence for continuous change in the future-oriented and internationally benchmarked development of research, innovation, and education agendas.



D sees itself as a gateway to the world of knowledge; promotes international cooperation, the universality of knowledge, interdisciplinary cooperation, autonomy in research and teaching, and academic freedom within the bounds of social responsibility; educates responsible people, connecting theory and practice. D has six goals in the mission statement: strengthening responsibility, internationalization, improving quality, interdisciplinary cooperation, creating regional contacts, and improving access to education and academia.

Four universities present different institutional concepts and strategic goals as Universities of Excellence. A has set five main goals for the Excellence Strategy with the concept of “Research - Relevance - Responsibility: Open to New Challenges and a Global Scope of Action”: Strengthening research excellence; Developing a collaborative research environment, first-class infrastructure, and networks to enhance the competitiveness of research areas; Changeability to engage with technological and social developments; Promoting global awareness in research and teaching; Expanding social commitment to promote new forms of research communication, public relations, and knowledge transfer. B systematically develops its culture of creativity with the concept of “creative together” and “towards a culture of creativity”. C aims to advance its position from among Europe’s most respected universities to join the top international league with the institutional strategy as an Entrepreneurial University to transform research, innovation, and education through its Agenda 2030 - Innovation through Talents, Excellence, and Responsibility. D has a flagship university concept (Innovating and Cooperating for a Sustainable Future) with five goals:

research, research-based teaching, knowledge transfer, research infrastructures, and internationalization.

“Higher education, particularly research universities, and science systems continue to experience transformation. The orientation to scientific ‘excellence’ or ‘quality’ and ‘relevance’ or ‘impact’ worldwide has led to innumerable initiatives to advance these often competing, yet sometimes complementary goals.” (Powell et al., 2017, p. 5). Universities of Excellence have gone through a transformation process with their concepts as Universities of Excellence. Labeling and benchmarking Universities of Excellence further strengthens their comparative advantages as top research-intensive universities at the national and international levels.

### ***Research and Teaching***

Four universities show excellent top-level research profiles in their core research areas, characterized as Clusters of Excellence and research centers. They promote top-level research and research-led teaching to ensure high quality and standards of research and teaching. They have established graduate schools with excellent research and teaching performance in diverse fields.

A is committed to research and teaching across a broad spectrum of subjects; encourages interdisciplinary and international cooperation; upholds academic freedom in research and teaching; develops a collaborative research environment; promotes global awareness in research and teaching; cultivates young researchers in the long term.

B is a research-oriented university with a culture of “research-led teaching” and advances the principle of independence in research



and teaching; takes responsibility for society; provides high-quality educational opportunities and collaborative research across disciplines; generates scientific knowledge and close links between research and teaching to advance scientific knowledge. Knowledge transfer is an integral component of research and teaching. The “Code of Practice for Effective Teaching” provides a summary of effective practices for teaching and learning.

C establishes strong links with companies and research institutions worldwide; fosters an open and culturally diverse mindset and supports an innovative society; is committed to excellence in research, teaching, and interdisciplinary education, actively promoting young researchers. C focuses on both knowledge-oriented basic research and applied research.

D is known for its outstanding basic research as well as applied and transfer research projects as the largest and the most diverse center of research in northern Germany.

The quality assurance of teaching and learning in German higher education institutions as an important part of university governance aligned with quality management and accreditation has been greatly affected by German higher education policies and initiatives. Four universities have projects with funding from the Quality Pact for Teaching: A’s project with the concept of “study successfully - teach successfully”; B’s “QualiTut” project with “b<sup>3</sup> - advise, accompany, assist” (b<sup>3</sup> - beraten, begleiten, beteiligen); C’s project “Agenda Lehre” to improve teaching and study conditions for excellent teaching; D’s Universitätskolleg as a university-wide project provides a conceptual, institutional, and administrative framework for

a multitude of projects under the title “Bridges to the University - Pathways to Academia”.

Among scholarship of discovery, integration, application, and teaching, “teaching means not only transmitting knowledge but also transforming and extending it” (Boyer, 1990, p. 23). Universities of Excellence are transforming traditional teaching into technology-enhanced teaching such as the integration of the Technological Pedagogical Content Knowledge (TPACK) framework into teaching. The hybridization of teaching and learning through digitalization and the growing assessment of teaching and learning through quality assurance mechanisms have greatly improved the quality of teaching and learning.

### ***Internationalization and Transnational Cooperation***

Four universities have established centers for international students and researchers to manage the increasing inward and outward mobility of international students and academic staff. They have introduced some structured English-mediated doctoral and master’s programs and internationalized the curricula of degree programs with a focus on academic freedom, academic achievements, and their relevance to employability.

A supports first-class responsible research with a high level of competitiveness in an international framework and provides internationally oriented research-led education to students. A has diverse strategic partnerships, e.g., the Matariki Network of Universities, the CIVIS (the alliance of eight leading research higher



education institutions in Europe), and the Guild of European Research-Intensive Universities.

B aims to shape internationalization as a social responsibility; expand the internationalization of science and research at the institutional level; enhance international visibility and the number of outgoing and incoming students; develop international partnerships (e.g., the Network for Transatlantic Cooperation, the Network of European Institutes for Advanced Study, European Network of Academic Integrity, the University-based Institutes for Advanced Study, Young European Research Universities Network), research cooperation, academic mobility of doctoral candidates, international competitiveness, excellent academic networks, supporting international collaborations of researchers, and the international orientation of teaching.

C expands its global relations and works closely with its global partner universities such as partners of the European EuroTech Alliance for joint research. C actively engages in international networks, strategic alliances, academic collaborations, and branch campuses (an Offshore-Campus in Singapore).

D cultivates a welcoming environment and an international climate to attract international talents; enhances international mobility of students and faculty and the attractiveness of the study location; develops internationally experienced personnel and recruits excellent researchers; expands international research collaborations, global engagement, strategic alliances, and partner networks worldwide (e.g., European University Alliance for Global Health); strengthens international research, international presence, and partnership for innovation, education, and research.



The internationalization of higher education fosters international academic mobility and cultivates an intercultural learning environment. “Transnational mobility of academics reshapes the production and dissemination of knowledge, the geographies of knowledge economies, and related spaces of knowledge production” (Teichler, 2002). Global engagement of four universities facilitates multi-channel to share and reallocate resources and promotes international collaborations through transnational networks, strategic alliances, partnerships, increased memberships, and transnational collaborations in research and degree programs, especially international student mobility through diverse ERASMUS programs or others. Global alliances, networks, partnerships, and global rankings represent the collective interests of the members of elite universities, shared values, vision, mission, and norms, which enhance institutional symbolic power and differentiate them from others through the label of Universities of Excellence. Global strategic alliances, multi-lateral networks, and transnational partnerships of Universities of Excellence as an important part of institutional strategies to initiate diverse transnational collaborations not only increase opportunities for collaborations to enhance knowledge production and dissemination on the national and international levels but also form knowledge networks through strategic targeting and positioning. The shift of knowledge production to transnational and multi-disciplinary collaborations enhances close collaborations inside and outside academia at home and abroad. The selectivity and exclusivity of alliances, networks, and partnerships further enlarge the stratification of the hierarchy of higher education institutions. Enhancing multiple hierarchies or horizontal differentiation within higher education systems may soften the “iron law of hierarchy”



(Croxford & Raffe, 2015, p. 2). Academic excellence, scientific productivity, selectivity in admissions, social elitism, institutional reputation, status, prestige, and rankings have become important parts of institutional symbolic power and symbolic capital for universities to gain comparative advantages in the global higher education market.

### *Innovation and Digital Transformation*

Four universities focus on knowledge transfer, especially technology transfer in collaboration with regional universities, research institutions, and industrial partners. A and B took part in the “PePP” Project (partnership for innovative digital examinations 2021-2024) for technical, didactic, and organizational innovations in digital examinations. Four universities have vice-presidents responsible for research and innovation as well as knowledge and technology transfer.

A has expanded its activities in innovation and knowledge transfer via the University Innovation Center, the Technology Transfer Office, the Start-up Center, the Innovation Lab & Coworking Space, and the industry liaison office to support companies, inventors, scientists, and business start-ups in collaboration between science and industry. The Cyber Valley Initiative is a cooperation between universities, research institutions, and companies in the field of artificial intelligence. The research campus model further intensifies cooperation among research institutions to collaborate on research projects; offers joint services; shares facilities; brings institutions, graduate schools, clusters of research, and all available resources together to optimize the allocation of resources, institutional research performance, innovation, knowledge production, and knowledge transfer; shifts knowledge production to an efficient way. The Digital Humanities Center provides researchers with high-performance

infrastructures and services on research data and research data management.

B appointed a vice-president responsible for sustainability, information, and communication technology as the Chief Information Officer (CIO) to lead strategic planning, controlling, and coordination in ICTs (information, communication, and technologies) for research, teaching, and administration.

C has its IT strategy to build a digital university and has the Chief Information Officer (CIO) responsible for improving the effectiveness of all information and communications processes and optimizing IT infrastructures. C has undertaken a series of reforms to transform itself into an entrepreneurial university since 1998. C promotes sustainable innovative progress and aims to build a global hub for knowledge exchange. The Innovation Networks promotes transdisciplinary research. The ForTe Office for Research and Innovation coordinates cooperative research and commercial venture as well as research funding support and technology transfer. The Industry Engagement Program serves as a platform between the university and the industry. The Center for Digital Transformation (CDT) research issues related to digitalization.

D has fostered knowledge and technology transfer through the Office for Knowledge and Technology Transfer as an intermediary between science and business for more than 30 years, supported by a cooperation partner since 2006. D has a vice president responsible for digitalization. The first chief digital officer (CDO) is appointed in 2021 to develop a digitalization vision and a corresponding digitalization strategy; to work closely together with actors from research, teaching, and administration to achieve successful digital transformation



The formation of new governance structures in four Universities of Excellence changes the present management board structures by introducing the CIO (Chief Information Officer) or similar positions to the management board to enhance digital strategies and innovations. Four universities have implemented blended learning and technology-enhanced teaching projects supported by ICTs, digital pedagogy, digital didactic, digital pedagogy, and digital resources in their teaching management systems. Four universities use official accounts on social media (e.g., Twitter, LinkedIn, Facebook, etc.) to disseminate information for greater transparency and visibility in the digital social space.

The integration of traditional university governance into digital governance to foster a dynamic and interconnected digital culture in teaching and learning in the ongoing process of digital transformation in German higher education institutions is greatly influenced by “three complementing axes (the federal digital agenda, the think tank ‘Hochschulforum Digitalisierung’, and calls for research proposals by the federal government to foster research on digitalization in higher education through funding by the German Ministry of Education and Research)” (Bond *et al.*, 2018, p. 4). Some regional digital platforms are established to further develop regional collaborations in digitalization such as Virtuelle Hochschule Bayern ([www.vhb.org](http://www.vhb.org)) and Hamburg Open Online University ([www.hoou.de](http://www.hoou.de)). The development of MOOCs and online learning are pushing the digital transformation in German higher education institutions, especially during the COVID-19 pandemic.

The transformation of university governance involves digital transformation and digital governance including digital

infrastructures and digital service systems. Digital governance in higher education encompasses main dimensions different from traditional university governance and concerns the standardization of education, transparency, and digitalization (Landri, 2018). "A range of connected and ICT-centered changes (reintegration, needs-based holism, and digitization changes) shifts toward digital-era governance involves reintegrating functions into the governmental sphere, adopting holistic and needs-oriented structures, and progressing digitalization of administrative processes." (Dunleavy et al., 2006, p. 467; Dunleavy & Margetts, 2010, p. 2). Meanwhile, digital governance may drive the governance model to move toward the state control model based on rational planning and control rather than the state supervising model based on self-regulation (van Vught & de Boer, 2015, p. 38).

Digital transformation in the education sector involves "sustainable management to adapt to the changes imposed by new technologies" (Abad-Segura, 2020, p. 1). The increasing applications of digital technologies (e.g., artificial intelligence, blockchain, cloud computing, big data, internet of things, augmented reality/virtual reality/mixed reality, edge computing, machine learning) are reshaping university governance in terms of management, administration, research, teaching, learning, and the utilization of resources. Digital innovation in teaching and learning involves technical, academic, curricular, organizational, and structural innovations (Hochschulforum, 2016, p. 10). The ICTs "will affect the intellectual activities of the university (learning, teaching, and research) and change how the university is organized, financed, and governed" (Guri-Rosenblit, 2005, p. 471). Digital technology applications and digital infrastructures have become essential parts of



technology-enhanced teaching and learning in a hybrid-flexible learning environment in a hybrid university. The increased applications of social media and digital technologies will enhance social networked learning. Technology-enhanced courses with a blended approach change the process and management of teaching and learning as well as the traditional way of knowledge dissemination and transmission, which overcome the limitations of physical space to widen access and optimize services in a hybrid-flexible learning environment (including flexible time, open access, open education resources, and the diversity of supplies) in a hybrid university. The socio-cultural, economic, technological, and pedagogical impacts of digital transformation and innovations on university governance are transforming traditional models of administration, teaching, and learning in higher education institutions.

### **Governance Relationships and Structures**

Four Universities have shown the changing governance relationships and structures. First, they have introduced the CIO (Chief Information Officer) or similar positions responsible for digitalization to the management board to lead digital transformation and innovation. “The changes caused by the new governance procedures mainly result in two fundamental shifts in the authority structure of the university: a considerable strengthening and professionalization of the central management and the increasing involvement of external persons (e.g., representatives from industry, the region, or the state) or committees in the institutional processes of decision-making” (Wolter, 2007, pp. 3-4).

Higher education governance needs to “combine the external (e.g., the relationships between state and university), the institutional

(focusing on a particular institution), and the internal dimension (inside the institution)" (Wolter, 2007, p. 1). "Higher education systems have three core centers of gravity - the academic 'oligarchy', the state, and the market, i.e., as reflected in entrepreneurial institutional leadership and the diffusion of competitive instruments into higher education governance" (Dobbins & Knill, 2017, p. 77). Shared governance with a balance between corporate-dominated and academic-dominated university governance (Shattock, 2002, p. 236) may optimize the allocation of resources, knowledge production, and knowledge transfer. For instance, A has actively engaged in the Cyber Valley partnerships to promote exchanges and collaborations with industrial partners. C has unique entrepreneurial governance.

Clark's (1983) triangle of coordination in university governance presents "the state authority, the market, and the academic oligarchy as three basic modes of governance and forces through their interaction to determine how a higher education system is coordinated" (Clark, 1983, p. 140; Lazzeretti & Tavoletti, 2006, p. 21). "Clark's (1983) governance triangle (professional/collegial at the apex, with government/managerial and market forms at the base) has been inverted and lost its equilibrium, such that remnants of professional/collegial governance are now strictly circumscribed by parameters set externally to universities" (Vidovich & Currie, 2011, p. 52). The Triple Helix model of university-industry-government relationships as "an evolutionary model of innovations" (Leydesdorff, (2000) has reshaped higher education institutions with a set of interactions among academia (the university), industry, and government to foster economic and social development in the knowledge economy and knowledge society (Etzkowitz & Leydesdorff, 2000). Based on the triple helix model, the Quadruple



helix (industry-university-government-societies) and quintuple helix (nature-industry-university-government-societies) innovation models address socio-ecological interactions for sustainable development and university-industry-government-public-environment interactions for co-development and co-evolution of advanced knowledge production and innovation systems (Carayannis & Campbell, 2011, p. 342).

The reform of the governance procedure and management structure in Universities of Excellence aims to ensure internal efficiency, quality, institutional/ academic/financial autonomy, academic freedom, transparency, social responsibility, social accountability, and educational equity for the public good; to secure the right degree of (de) centralization; to improve decision-making (e.g., increasing the decision power of the leaders and simplifying the decision process); to incorporate leadership, management, and administration; to professionalize the decision mechanisms and the administration (Weber, 2006, pp. 67-72). The most important dimensions of management mechanisms in higher education are “the organizational structure, the mechanisms of planning and control, the incentive system, the information systems, and the coordination mechanisms” (Küpper, 2003, p. 7). Institutional leadership sets strategic direction; management focuses on achieving outcomes and monitoring institutional effectiveness and efficiency in distributing resources; administration implements procedures (Maassen, 2003, p. 32).

The current transformation of universities into competitive organizational actors involves reconfigurations of internal governance structures with a more powerful chief executive (university presidents/rectors) and boards of directors (university boards) (Kretek,



Dragšić, & Kehm, 2013, p. 40) and show its focus on national and international rankings, progressively hierarchical decision-making structures, increased organizational accountability, openness to management consultancy, a more differentiated organizational structure, the professionalization of university management, and growing branding activities (Hasse & Krücken, 2013). The transformation is connected to the construction of leadership towards a more managerial form of university governance to enable universities to act strategically to keep autonomous, competitive, entrepreneurial, and individual organizational identities (Krücken *et al.*, 2009, p. 2), which may challenge “the uniqueness of the national university system and the university as a specific type of organization” (Krücken & Meier, 2006; Krücken, 2011, p. 4).

### **Funding and Autonomy**

Four Universities of Excellence have successfully received additional funding through the Excellence Initiative and the Excellence Strategy of the German federal and state governments besides the other resources of funding to develop top-level research in alignment with institutional strategies for building world-class universities. However, they still face financial challenges and funding constraints with the increasing costs of education and limited fundraising from the federal and state governments as well as the third-party fundraising and other funding resources because the funding of public universities mainly comes from governmental funding compared with fundraising from other sources. Financial dependence may threaten their financial integrity and financial autonomy as an important part of institutional autonomy.



The International Expert Commission for the Evaluation of the Excellence Initiative recommended the targeted funding of top-level research for institutional development (IEKE, 2016). The performance-based funding as an instrument of competition in German higher education through the Excellence Initiative and the Excellence Strategy stimulate higher education institutions to improve the quality of teaching and research in response to the increased accountability for using public funds and are required to demonstrate value for money, even though growing funding constraints may limit the availability of resources. The funding is mainly research funding and reflects governmental priorities in specific fields of research, which may mismatch the research development of certain areas. Besides policy and financial support from the federal and state governments, Universities of Excellence need to engage all actors and stakeholders to ensure the quality of teaching and learning, research outputs, adequate financial resources for funding, and human resource development (Kehm, 2013a, p. 91).

“The funding for German higher education institutions (expenditure for research and teaching, salaries, material, and operating costs) is part of each federal state’s annual education ministry budget and traditional line-item budgets have been partially re-designed through performance-based allocations, although the redistributive effect of this measure has proven extremely limited” (Capano, 2011, p. 1631). “German public higher education institutes are mainly financed by federal states as their responsibility with some federal government framework legislation to set boundaries for the state laws” (Ziegele, 2006, p. 265). The expenditures of German public universities are granted through lump-sum budgeting in the three-pillars funding model: “basic funding, performance-orientated

funding, and innovation-/ profile-oriented funding” (Ziegele & Rischke, 2013, p. 6). Five major funding instruments in German higher education include “the institutional funding through state governments; earmarked project funding related to specific political purposes by state or federal governments; the federal government’s Excellence Initiative promoting the top research; the federal-state co-funded Higher Education Pact; and the federal-state co-funding of research projects (e.g., DFG)” (Ziegele & Rischke, 2013, p. 4). “State baseline funding and third-party funding are the two most important funding sources, but two-thirds of the third-party funding is public money that flows mostly via competition arrangements (e.g., through the German Research Foundation) to higher education institutions” (Hüther & Krücken, 2018). It has been long-lasting debates about tuition fee as an instrument for financing German higher education institutions such as the diversified tuition fees, the renunciation of tuition fees, or low tuition fees.

The diversification of financial resources will expand fundraising channels from broader sources and diversified fundraising models as well as philanthropic fundraising and self-generated funding from multiple sources e.g., university foundations, research foundations, technology transfer, the licensing of patents, revenue through services, continuing education, fundraising, sponsoring, or business operation aligned with research and development. C is the first university to run a professional fundraising campaign in Germany. The other three universities also engaged in fundraising activities.

“The governance of public universities is significantly influenced by government policy, with particular emphasis on



efficiency and three guiding principles of governance (institutional autonomy, academic freedom, and openness)” (Trakman, 2008, p. 64). “Institutional governance arrangements are often shaped by national governance structures through legislation, funding systems, and systems for evaluation, accreditation, and control” (Bleiklie & Kogan, 2007, p. 486).

The fundamental tasks of university governance are to ensure “effective university autonomy to keep the operation of the university self-directed” (Balderston, 1995, p. 63). Autonomy enables higher education institutions to optimize the allocation of resources to achieve strategic goals and missions (Pandey, 2004, p. 79). Universities will be more efficient if they are endowed with a greater degree of autonomy (Neave, 1995, p. 65). University governance involves accountability and autonomy and should consider balancing the power relationship between government and universities. Universities need to act with clear internal management and decision-making structures with extensive autonomy from the state in external relations. However, to what extent should higher education institutions keep academic, institutional, and financial autonomy remain unclear. Decentralization of the higher education system does not automatically lead to a higher degree of university autonomy. The federal and state governments enhance their control over Universities of Excellence and preserve their influence through the funding policies instead of stepping out from their funding responsibilities, which may lead Universities of Excellence to move in the direction of the expectation of the federal and state governments and could mismatch their governance practice.

## **Quality Assurance and Sustainable Development**

Four universities have undergone system accreditation as an instrument of quality assurance to ensure the quality of degree programs, research, and teaching through the system-accredited quality assurance system, following the European Standards and Guidelines for Quality Assurance in Higher Education (ESG) as well as the criteria specified by the Standing Conference of the Ministers of Education and Cultural Affairs (KMK) and the Accreditation Council in Germany. Accreditation as an instrument of quality assurance is an important part of university governance (Baumann & Krücken, 2019, p. 44) to link governance, funding mechanisms, higher education policies, and quality management in higher education institutions. Measures including assessment, benchmarking, and key performance indicators (e.g., research outputs, scientific productivity, knowledge transfer, etc.) shift judgments of research and teaching from the academic profession towards external bodies and institutional management.

Four universities highlight their international profiles and ranking placements in the global rankings of world-class universities, e.g., the Academic Ranking of World University (ARWU), QS World University Rankings, and the Times Higher Education World University Ranking. National and international ranking systems provide comparability, compatibility, and transparency to identify areas for further improvement, strategic positioning, branding, and benchmarking. Ranking as a third-party authentic instrument benchmarks Universities of Excellence to differentiate from others while pushing universities to enhance quality, reputation, competitiveness, and international visibility, providing transparency



and accountability for stakeholders. If universities give priority to ranking as institutional strategies, they may miss a broad concept of good governance to improve organizational effectiveness for internal efficiency.

The Times Higher Education Impact Rankings measure global universities' success in delivering the UN's Sustainable Development Goals by evaluating university performance on Sustainable Development Goals (SDGs) (THE, 2022). UNESCO's education for sustainable development (ESD) for 2030 education program aims to bring about personal and societal transformation. The 2030 Agenda for Sustainable Development with the 17 Sustainable Development Goals (SDGs) is adopted by all United Nations member states in 2015 (United Nation, 2015). Universities' commitment to the 17 Sustainable Development Goals (SDGs) as their response to the global discourses in higher education for sustainable development advocated by UNESCO evokes discussion on sustainability governance and "the emerging university function of co-creation for sustainability" (Trencher et al., 2014). Quality education is one of 17 UN Sustainable Development Goals (SDGs). Education for sustainable development is recognized as a key element of quality education and a crucial enabler for sustainable development. As part of the UNESCO Global Action Programme on Education for Sustainable Development (2014 to 2019), a National Action Plan in Germany was developed by the Platform on Education for Sustainable Development and led to a joint declaration of the Conference of Rectors (HRK) in Germany and UNESCO Commission (DUK) on sustainability as a guiding concept for universities in 2017.

Four universities have stated their Sustainable Development Goals (SDGs) on their websites. A regards sustainability as an integral part of research and teaching and established the Competence Center for Sustainable Development and the Innovation Fund for Sustainable Development. B integrates sustainability into degree programs as part of education for sustainable development and shapes research and teaching with the goals of sustainable development. Both A and D participate in the “Sustainability at Higher Education Institutions: Develop-network-report” (HOCHN) project to advance sustainable development (HOCHN, 2020) to the transformation of a sustainable society through the fields of action in research, teaching, operation, knowledge transfer and governance, following the joint HRK/DUK declaration “Higher Education Institutions for Sustainable Development” and the HRK recommendation “For a Culture of Sustainability at Higher Education Institutions” (HOCHN, 2020, p. 18).

C integrates sustainability into its educational mission and regards sustainability as a key element of its future development agenda with its objective to exert the full sustainability potential across its key action areas. Its sustainability statement provides an outline for institutional sustainable development including sustainability vision, sustainability mission, and its sustainability strategy in six interrelated action fields (research, education and lifelong learning, entrepreneurship; campus and operations: governance and engagement; communication and knowledge transfer). C is committed to sustainable innovation and progress for people, nature, and society. The Business School of C regards sustainability as its key priority and integrates sustainability into research and teaching, addressing sustainability in its key teaching modules (e.g., sustainable management, new sustainable ventures, and sustainable



entrepreneurship). In 2013, the Business School of C signed on to the United Nations Principles of Responsible Management Education (UN PRME), which was established in 2007 as a United Nations initiative and a global movement to transform business and management education.

D operated the Center for a Sustainable University to become a university for a sustainable future in research, teaching, education, and administration from 2011 to 2019. D adopted the guiding principle of “innovating and cooperating for a sustainable future” to achieve the UN’s Agenda 2030 Sustainable Development Goals (SDGs) and is committed to sustainable science and scholarship as a sustainable university as well as sustainability in research and teaching for sustainable development as a “University for a Sustainable Future” to ensure its future viability in research, teaching, and university management; enhances responsibility, internationalization, quality, and interdisciplinary cooperation; creates regional contacts; improves access to education and academia; provides a diverse range of degree programs, numerous interdisciplinary projects, research opportunities, and an extensive partner network of leading regional, national, and international research institutions.

Sustainability has become an important part of institutional strategies in line with the sustainable development goals advocated by the United Nation. “Sustainability governance could be considered a self-evident part of the duties of a higher education institution in teaching, research, and campus management” (Bauer et al., 2018, p. 494). Sustainable development as an integral part of teaching, research, and operations is aligned with “transformative environments and processes within higher education institutions, organizational



practices, transdisciplinary approaches as well as effective leadership for sustainability” (Mader et al., 2013, p. 269; Bauer et al., 2018, p. 494). Actions to create an institutional culture of sustainability “encourage universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward global sustainability” (Talloires Declaration, 1990).

### **Contribution and Implications**

The governance transformation of Universities of Excellence has significant implications for institutional strategic decision-making in university governance for sustainable development and the emerging digital governance in a hybrid university, which evokes discussion on transforming university governance, digital governance, and sustainability governance in higher education institutions aligned with teaching, research, and the third mission of the university. The transformation of university governance indicates a trend to move towards the relevance of the market and knowledge transfer as the third mission. The impacts of global actors on shaping educational policies and university governance also bring global governance and network governance to the focus. This study has significant implications for good governance as a major factor in improving the quality of higher education to strengthen institutional identity and autonomy at the institutional level. The transformation of university governance draws attention to rethink “the typology of governance mechanisms in higher education: academic self-regulation, competition for resources, managerial self-guidance, stakeholder guidance, and state control” (Leisyte, 2014).



## **Limitations and Future Research**

This paper only presents four Universities of Excellence as the leading public research universities. It does not reflect all types of German higher education institutions. Further research may explore all types of German higher education institutions and university governance in different national contexts from international and comparative perspectives.

## **Conclusion**

The governance transformation of German higher education is pushing fundamental institutional changes, strategic management, and leadership to respond to challenges, competition, and autonomy (Mayer & Ziegele, 2009, p. 16). The increasing external pressures drive internal changes in university governance and the reconfiguration of internal governance structures toward the governance transformation of Universities of Excellence. The governance transformation of Universities of Excellence is significantly influenced by governmental higher education policies and funding incentives in alignment with digital transformation in German higher education institutions. The implementation of the Excellence Initiative and the Excellence Strategy as a political governance instrument accelerated the governance transformation of Universities of Excellence in line with internationalization, innovation, digital transformation, and sustainable development. Changes in governance relationships and structures lead to governance transformation with increasing convergence in traditional governance and digital governance in a hybrid university.

Transforming university governance for good governance and sustainable development in alignment with institutional missions, vision, core values, and strategic development goals will optimize the processes and structures for organizational effectiveness and efficiency in many aspects, e.g., global engagement (strategic alliances, partnerships, and networks), internationalization, ranking, funding, innovation, digitalization, research outputs, assurance of teaching and learning, quality management for continuous quality improvement, and the utilization of financial resources and human resources.

In the process of transforming governance, universities need to come up with strategies to mitigate challenges (e.g., insufficient funding and structural changes) in the global competition and establish an internal efficient governance structure through excellent academic leadership, democratic decision-making, and effective supervision without affecting institution autonomy and academic freedom. Research and teaching as two traditional missions of universities together with the third mission (service to society) should be a part of institutional strategic management in university governance. Universities should act proactively on a self-regulation base with a strong sense of ownership and the responsibility to ensure the effectiveness of management and governance arrangements, institutional autonomy, academic freedom, quality assurance, openness, transparency, social accountability, performativity, relevance, and sustainable development. Academic leaders need to optimize the utilization of human and financial resources with efficient administrative management to bring out the best synergy in innovation, global engagement, research, and teaching in alignment with institutional missions, vision, core values, goals, and strategies.



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